

REMARKS

Claims 1-41 were previously pending in the application. Claims 1-5, 7, 9, 11-15, 17, and 19 have been amended. Claims 6, 8, 16, 18, and 21-41 have been cancelled. Claims 42-43 are newly submitted. Accordingly, claims 1-5, 7, 9-15, 17, 19-20, and 42-43 are now pending in the application. Reconsideration is respectfully requested in view of the amendments to the claims and the following remarks.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-6, 8-9, 11-16, 18-19 and 31-38 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Pat. No. 6,385,715 ("Merchant"). Applicants respectfully traverse the rejection.

Claim 1 recites a method that includes issuing a first instruction from a queue. In response to detecting a blocking condition that prevents the first instruction from being completed, the method includes determining whether the blocking condition is a non-transient blocking condition or a transient blocking condition, in which a transient blocking condition has a shorter duration relative to a non-transient blocking condition.

In response to the blocking condition being a non-transient blocking condition, the method includes (i) enqueueing the first instruction within a recirculation queue, and (ii) setting a state of the first instruction to a blocked state to prevent the first instruction from being reissued from the recirculation queue.

In response to the blocking condition being a transient blocking condition, the method include (i) enqueueing the first instruction within the recirculation queue, and (ii) setting the state of the first instruction to an unblocked state to permit the first instruction to be reissued from the recirculation queue.

A. Merchant fails to disclose a recirculation queue of the kind recited in claim 1.

Merchant discloses a processor including a replay system for replaying instructions which have not executed properly (see Abstract). Specifically, Merchant's replay system includes staging queues A-F (for storing short latency instructions - col. 5, ll. 16-23, col. 6, ll. 39-49). Each staging queue A-F delays instructions for a corresponding fixed number of clock cycles (col. 5, ll. 19-20). Merchant's replay system further includes a replay queue 170 (for storing long latency instructions - col. 8, ll. 13-22).

The recirculation queue recited in claim 1 does not correspond to any of the queues within Merchant's replay system.

First, the recirculation queue cannot correspond to any of the staging queues A-F because, unlike each of the staging queues A-F which can only delay instructions for a corresponding fixed number of cycles, the recirculation queue is operable to store instructions associated with blocking conditions having different durations - e.g., a non-transient blocking condition and a transient blocking condition.

Second, the recirculation queue cannot correspond with the replay queue 170 because the replay queue 170 stores only instructions that can be reissued when a condition causing the instructions to not complete successfully is cleared (see col. 8, ll. 46-53.) In contrast, an instruction is operable to be enqueued into the recirculation queue of claim 1 having an unblocked state in which the instruction is permitted to be reissued from the recirculation queue - e.g., the case in which the blocking condition is a transient blocking condition.

For at least these reasons, Applicant submits that claim 1, and the claims that depend therefrom, are allowable over Merchant.

B. Other Claims

Applicants respectfully submit that claim 11, and the claims that depend therefrom, are allowable over Merchant for at least similar reasons as claim 1. Applicants' position with respect to the dependent claims should not be understood as implying that no other reasons for the patentability of such claims. Applicants reserve the right to address these other reasons at a later date if needed.

REJECTION UNDER 35 U.S.C. § 103

Claims 10 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Merchant in view of Official Notice. Claims 7, 17, 21-30 and 39-41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Merchant. Applicants respectfully traverse these rejections.

Dependent claims 10 and 20 ultimately depend from independent claims 1 and 11 and are believed to be allowable for at least similar reasons. Applicants respectfully submit the rejections to claims 7, 17, 21-30, and 39-41 are moot in view of the amendments to the claims.

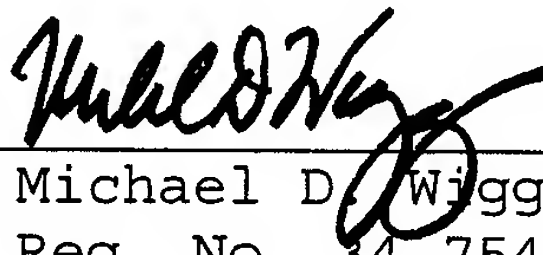
CONCLUSION

It is believed that all of the stated grounds of rejection have been properly addressed. For all of the reasons set forth above, Applicants submit that the application is in condition for allowance. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. By addressing particular positions taken by the Examiner in the above remarks, Applicants do not acquiesce to other positions that have not been explicitly addressed. In addition, Applicants' arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist.

If the Examiner believes that personal communication will allow any outstanding issues to be resolved, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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